WHAT IS CLAIMED IS:

1.   A method for identifying a test compound which inhibits protein tyrosine phosphatase 1B (PTP1B) expression in liver or fat of a non-human mammal, the method comprising the steps of:

(a)   treating an insulin resistant non-human mammal with said test compound for a time and under conditions sufficient to allow for a change in the level of expression of at least one of PTP1B mRNA or protein in the liver or fat of said mammal;

(b)   removing the fat or liver from said mammal;

(c)   detecting the levels of phosphotidylinositol-3-kinase p85α and p50α and/or p55α isoforms in said liver or fat; and

(d)   determining whether the test compound inhibits at least one of PTP1B mRNA or protein in said liver or fat based upon on the levels of p85α, p50α and/or p55α detected in said liver or fat.

2.   The method of claim 1 wherein the non-human mammal is a mouse, rat, monkey, chimpanzee, dog or cow.

3.   The method of claim 1 wherein the test compound a protein, oligopeptide, organic molecule, polysaccharide, oligonucleotide or polynucleotide.

4.   The method of claim 3 wherein the test compound is an antisense oligonucleotide or antisense polynucleotide.

5.   A method for identifying a test compound which downregulates protein tyrosine phosphatase 1B (PTP1B) expression in liver or fat of a non-human mammal, the method comprising the steps of:

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(a)   treating an insulin resistant non-human mammal with said test compound for a time and under conditions sufficient to allow for a change in the level of expression of at least one of PTP1B mRNA or protein in the liver or fat of said mammal;

(b)   removing the fat or liver from said mammal;

(c)   detecting the levels of phosphotidylinositol-3-kinase p85α and p50α and/or p55α isoforms in said liver or fat; and

(d)   determining whether the test compound downregulates the level of expression of at least one of PTP1B mRNA or protein in said liver or fat based upon on the levels of p85α, p50α and/or p55α detected in said liver or fat.

6.   The method of claim 5 wherein the non-human mammal is a mouse, rat, monkey, chimpanzee, dog or cow.

7.   The method of claim 5 wherein the test compound a protein, oligopeptide, organic molecule, polysaccharide, oligonucleotide or polynucleotide.

8.   The method of claim 7 wherein the test compound is an antisense oligonucleotide or antisense polynucleotide.

9.   A method for identifying a test compound which increases insulin sensitivity and reduces blood glucose in an insulin resistant non-human mammal, the method comprising the steps of:

(a)   treating an insulin resistant non-human mammal with a test compound for a time and under conditions sufficient to allow for reduced level of expression of at least one of PTP1B mRNA or protein in the liver or fat of a non-human mammal;

(b)   removing the fat or liver from said mammal;

(c)   detecting the levels of phosphotidylinositol-3-kinase p85α and p50α and/or p55α isoforms in said liver or fat of said non-human mammal; and

(d)   determining whether said test compound increases insulin sensitivity and reduces blood glucose in said non-human mammal based upon an the levels of p85α, p50α and/or p55α detected in said liver or fat of said non-human mammal.

10.   The method of claim 9 wherein the non-human mammal is a mouse, rat, monkey, chimpanzee, dog or cow.

11.   The method of claim 9 wherein the test compound a protein, oligopeptide, organic molecule, polysaccharide, oligonucleotide or polynucleotide.

12.   The method of claim 11 wherein the test compound is an antisense oligonucleotide or antisense polynucleotide.

13.   A method for identifying a composition which increase the levels of IRS-2 in the liver of an insulin resistant, obese non-human mammal, the method comprising the steps of:

(a)   treating an insulin resistant non-human mammal with a composition for a time and under conditions sufficient to allow for a change in the level of expression of IRS-2 in the liver of a nonhuman mammal;

(b)   removing the liver of said mammal;

(c)   detecting the levels of IRS-2 in said liver of said non-human mammal; and

(d)   determining whether said composition increases the level of IRS-2 in the liver of said non-human mammal.

14.   The method of claim 13 wherein the non-human mammal is a mouse, rat, monkey, chimpanzee, dog or cow.

15.   The method of claim 14 wherein the test compound a protein, oligopeptide, organic molecule, polysaccharide, oligonucleotide or polynucleotide.

16. The method of claim 13 wherein the test compound is an antisense oligonucleotide or antisense polynucleotide.

17. A method for identifying a test compound which downregulates the level of expression of at least one gene involved in lipogenesis, the method comprising the steps of:

(a) treating an insulin resistant non-human mammal with a test compound for a time and under conditions sufficient to allow for a reduction in the level of expression of at least one gene involved in lipogenesis a non-human mammal;

(b) removing the fat from said mammal;

(c) detecting the level of expression of at least one gene involved in lipogenesis in said fat of said non-human mammal; and

(d) determining whether said test compound downregulates the level of expression at least one gene involved in lipogenesis in said non-human mammal.

18. The method of claim 17 wherein the non-human mammal is a mouse, rat, monkey, chimpanzee, dog or cow.

19. The method of claim 17 wherein the test compound a protein, oligopeptide, organic molecule, polysaccharide, oligonucleotide or polynucleotide.

20. The method of claim 19 wherein the test compound is an antisense oligonucleotide or antisense polynucleotide.

21. A method for identifying a test compound which downregulates the level of expression of at least one gene involved in gluconeogenesis, the method comprising the steps of:

(a) treating an insulin resistant non-human mammal with a test compound for a time and under conditions sufficient to allow for a reduction in the level of expression of at least one gene involved in gluconeogenesis a non-human mammal;

(b) removing the fat from said mammal;

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(c)   detecting the level of expression of at least one gene involved in gluconeogenesis in said fat of said non-human mammal; and

(d)   determining whether said test compound downregulates the level of expression of at least one gene involved in gluconeogenesis in said non-human mammal.

22.   The method of claim 21 wherein the non-human mammal is a mouse, rat, monkey, chimpanzee, dog or cow.

23.   The method of claim 21 wherein the test compound a protein, oligopeptide, organic molecule, polysaccharide, oligonucleotide or polynucleotide.

24.   The method of claim 23 wherein the test compound is an antisense oligonucleotide or antisense polynucleotide.